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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/775,514	02/05/2001	Toshihiro Tsumura	49657-983	8460

7590 08/09/2004

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EXAMINER

PHAN, HANH

ART UNIT PAPER NUMBER

2633

DATE MAILED: 08/09/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/775,514

Applicant(s)

TSUMURA, TOSHIHIRO

Examiner

Hanh Phan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 February 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7-15, 18, 19 is/are rejected.
- 7) ☒ Claim(s) 5, 16 and 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is responsive to the Amendment filed on 05/25/2004.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 6, 7, 18 and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Green et al (US Patent No. 6,624,916).

Regarding claims 1, 6, 7, 18 and 19, referring to Figures 2-4 and 9-11, Green discloses a multi-channel optical communication system comprising:

- an optical transmitting apparatus (i.e., local distribution node 3, Figs. 2 and 9) including
 - a retro-reflector (i.e., retro-reflector and modem unit 13, Figs. 2 and 9) reflecting incident light in the direction of a source of the incident light and
 - a modulator (i.e., modulator 53, Figs. 3 and 4) for modulating the light reflected by the retroreflector according to a transmission signal; and
 - an optical receiving apparatus (i.e., user terminal 7, Figs. 2 and 9) including a light emitter (i.e., laser diode 17, Figs. 2 and 9) emitting light and a

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demodulator (i.e., photodiode 29, filter 35, clock recovery and data retrieve unit 37 and user unit 39, Figs. 2 and 9) for demodulating from the light emitted from the light emitter and reflected from the retroreflector the transmission signal modulated by the modulator,

a plurality of reflection condition control devices (Figs. 3, 4 and 11) arranged on a reflection plane of the retroreflector and capable of controlling optical reflection independently of each other and a driver for separately controlling each of the reflection condition control devices according to the transmission signal, and

the demodulator including

a photoreceiver (i.e., photodiode 29, Figs. 2 and 9) having a plurality of photoreceptors arranged correspondingly to arrangement of the plurality of reflection condition control devices for receiving the reflected light and

a signal demodulating circuit (i.e., photodiode 29, filter 35, clock recovery and data retrieve unit 37 and user unit 39, Figs. 2 and 9) reconstructing the transmission signal from respective outputs of the plurality of photoreceptors (see from col. 4, line 63 through col. 8, line 35 and see from col. 10, line 51 through 11, line 46, and see col. 13, lines 17-27).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to

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be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2-4 and 8-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Green et al (US Patent No. 6,624,916).in view of Fan et al (US Patent No. 6,449,406).

Regarding claims 2-4 and 8-15, Green discloses all the aspects of the claimed invention as set forth in the rejection to claims 1, 6 and 18 above except fails to teach each of the reflection condition control devices includes a digital micro-actuator provided on the rear side of a transparent plate constituting the reflection plane of the retro-reflector and having a control plane according to an applied signal to change its direction, the direction of the control plane being changed to control reflection from the rear side of the transparent plate.

However, Fan teaches each of the reflection condition control devices includes a digital micro-actuator provided on the rear side of a transparent plate constituting the reflection plane of the retro-reflector and having a control plane according to an applied signal to change its direction, the direction of the control plane being changed to control reflection from the rear side of the transparent plate (Figs. 6A-6C, col. 9, lines 3-32). Therefore, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the each of the reflection condition control devices includes a digital micro-actuator provided on the rear side of a transparent plate constituting the reflection plane of the retro-reflector and having a control plane according to an applied signal to change its direction, the direction of the control plane being changed to control reflection

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from the rear side of the transparent plate as taught by Fan in the system of Green. One of ordinary skill in the art would have been motivated to do this since Fan suggests in column 9, lines 3-32 using such the each of the reflection condition control devices includes a digital micro-actuator provided on the rear side of a transparent plate constituting the reflection plane of the retro-reflector and having a control plane according to an applied signal have advantage of allowing the reflected beams are still parallel to the input beam and the walk off problem is eliminated.

Allowable Subject Matter

6. Claims 5, 16 and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

7. Applicant's arguments with respect to claims 1-19 have been considered but are moot in view of the new ground(s) of rejection.

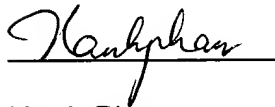
Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh Phan whose telephone number is (703)306-5840.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan, can be reached on (703)305-4729. The fax phone number for the organization where this application or proceeding is assigned is (703)872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-4700.

A handwritten signature in cursive script, appearing to read 'Hanh Phan', is written over a horizontal line.

Hanh Phan

08/06/2004